



16869S-094000US IPW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

HIDEOMI IDEI *et al.*

Application No.: 10/656,096

Filed: September 5, 2003

For: MANAGEMENT SERVER FOR
ASSIGNING STORAGE AREAS
TO SERVER, STORAGE
APPARATUS SYSTEM AND
PROGRAM

Customer No.: 20350

Examiner: Unassigned

Technology Center/Art Unit: 2141

Confirmation No.: 9922

RESUBMISSION OF PETITION TO
MAKE SPECIAL FOR NEW
APPLICATION UNDER M.P.E.P.
§ 708.02, VIII & 37 C.F.R. § 1.102(d)

MAIL STOP PETITION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The enclosed Petition to Make Special was filed on December 17, 2004. Also enclosed is a copy of the Express Mail label stamped December 17, 2004, the return postcard stamped December 17, 2004, the Transmittal Form, and the Fee Transmittal.

No decision on the Petition has not been entered according to Patent Application Information Retrieval (PAIR).

In view of the foregoing, Applicants respectfully request entry of the Petition and issuance of a first Office Action at an early date.

Respectfully submitted,

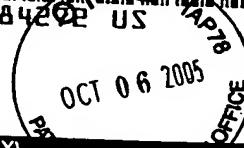
Chun-Pok Leung
Reg. No. 41,405

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 650-326-2400; Fax: 415-576-0300
Attachments

RL:rl
60600475 v1



EV 530884272 US



COPY
EXPRESS
MAIL

UNITED STATES POSTAL SERVICE

Mailing Label
Label 11-F June 2002

ORIGIN (POSTAL USE ONLY)

PO ZIP Code	Day of Delivery	Flat Rate Envelope
	<input type="checkbox"/> Next <input type="checkbox"/> Second <input type="checkbox"/>	
Date In	Postage	
Mo. Day Year	<input type="checkbox"/> 12 Noon <input type="checkbox"/> 3 PM \$	
Time In	Military	
<input type="checkbox"/> AM <input type="checkbox"/> PM	<input type="checkbox"/> 2nd Day <input type="checkbox"/> 3rd Day	
Weight	Int'l Alpha Country Code	COD Fee
lbs. ozs.		Insurance Fee
No Delivery	Acceptance Clerk Initials	Total Postage & Fees
<input type="checkbox"/> Weekend <input type="checkbox"/> Holiday		\$

DELIVERY (POSTAL USE ONLY)

Delivery Attempt	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	
Delivery Attempt	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	
Delivery Date	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	

WAIVER OF SIGNATURE (Domestic Only) Additional insurance is void if no signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.

NO DELIVERY Weekend Holiday

Customer Signature

METHOD OF PAYMENT:

Express Mail Corporate Acct. No.

X941886

Federal Agency Acct. No. or
Postal Service Acct. No.

FROM: (PLEASE PRINT) 650 326 2400
 TOWNSEND TOWNSEND & CREW LLP
 379 LYTTON AVE
 PALO ALTO CA 94301-1431

TO: (PLEASE PRINT)

PHONE ()

CUMMISSIONER FOR PATENTS
 PO BOX 1450
 ALEXANDRIA

VA 22313-1450

16869S-094000US RL/jb

PRESS HARD.
You are making 3 copies.

FOR PICKUP OR TRACKING CALL 1-800-222-1811 www.usps.com



EV 530884272 US

ORIGIN (POSTAL USE ONLY)

PO ZIP Code	Day of Delivery	Flat Rate Envelope
011301	<input type="checkbox"/> Next <input type="checkbox"/> Second <input type="checkbox"/>	
Date In	Postage	
Mo. Day Year	<input type="checkbox"/> 12 Noon <input type="checkbox"/> 3 PM \$	
Time In	Military	
<input type="checkbox"/> AM <input type="checkbox"/> PM	<input type="checkbox"/> 2nd Day <input type="checkbox"/> 3rd Day	
Weight	Int'l Alpha Country Code	COD Fee
lbs. ozs.		Insurance Fee
No Delivery	Acceptance Clerk Initials	Total Postage & Fees
<input type="checkbox"/> Weekend <input type="checkbox"/> Holiday		\$

DELIVERY (POSTAL USE ONLY)

Delivery Attempt	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	
Delivery Attempt	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	
Delivery Date	Time	Employee Signature
Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM	

WAIVER OF SIGNATURE (Domestic Only) Additional insurance is void if no signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.

NO DELIVERY Weekend Holiday

Customer Signature

METHOD OF PAYMENT:

Express Mail Corporate Acct. No.

X941886

Federal Agency Acct. No. or
Postal Service Acct. No.

FROM: (PLEASE PRINT) 650 326 2400
 TOWNSEND TOWNSEND & CREW LLP
 379 LYTTON AVE
 PALO ALTO CA 94301-1431

TO: (PLEASE PRINT)

PHONE ()

CUMMISSIONER FOR PATENTS
 PO BOX 1450
 ALEXANDRIA

VA 22313-1450

16869S-094000US RL/jb

PRESS HARD.
You are making 3 copies.

FOR PICKUP OR TRACKING CALL 1-800-222-1811 www.usps.com



COPY**TO THE U.S. PATENT AND TRADEMARK OFFICE:**

60381235v1

Application No.:	10/656,096	Docket No.:	16869S-094000US
Confirmation No.:	9922	Attorney:	RL:jbs
Due Date:	N/A		
Date Mailed:	December 17, 2004		

Please stamp the date of receipt of the following documents and return this card to addressee.

- Transmittal Form
- Fee Transmittal (in duplicate)
- Preliminary Amendment
- Petition to Make Special
- Nine (9) cited references: (U.S. Patent No. 6,606,690 B2; U.S. Patent Publication Nos. 2002-0078174 A1/2002-0156984 A1/2003-0110263 A1/2003-0236884 A1/2004-0193827 A1/2004-0194061 A1; Japanese Patent Publication No. JP 10-333950; and Evaluator Group, Inc. article.)
- Return Receipt Postcard

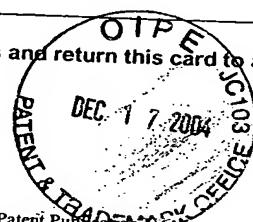
**TO THE U.S. PATENT AND TRADEMARK OFFICE:**

60381235v1

Application No.:	10/656,096	Docket No.:	16869S-094000US
Confirmation No.:	9922	Attorney:	RL:jbs
Due Date:	N/A		
Date Mailed:	December 17, 2004		

Please stamp the date of receipt of the following documents and return this card to addressee.

- Transmittal Form
- Fee Transmittal (in duplicate)
- Preliminary Amendment
- Petition to Make Special
- Nine (9) cited references: (U.S. Patent No. 6,606,690 B2; U.S. Patent Publication Nos. 2002-0078174 A1/2002-0156984 A1/2003-0110263 A1/2003-0236884 A1/2004-0193827 A1/2004-0194061 A1; Japanese Patent Publication No. JP 10-333950; and Evaluator Group, Inc. article.)
- Return Receipt Postcard



COPY

PTO/SB/21 (09-04)

**TRANSMITTAL
FORM**

(to be used for all correspondence. Initial filing or continuation)

14578
OCT 06 2005
PATENTS
U.S. PATENT AND TRADEMARK OFFICE

18

		Application Number	10/656,096
		Filing Date	September 5, 2003
		First Named Inventor	Idei, Hideomi
		Art Unit	2141
		Examiner Name	Unassigned
Total Number of Pages in This Submission		Attorney Docket Number	16869S-094000US

ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition to Make Special <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Postcard Nine (9) cited references
<input type="checkbox"/> Preliminary Amendment <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)		
<input type="checkbox"/> Extension of Time Request		
<input type="checkbox"/> Express Abandonment Request		
<input type="checkbox"/> Information Disclosure Statement		
<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.	
<input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

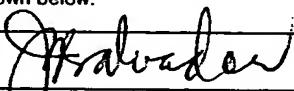
Firm Name	Townsend and Townsend and Crew LLP		
Signature			
Printed name	Chun-Pok Leung		
Date	December 17, 2004	Reg. No.	41,405

CERTIFICATE OF TRANSMISSION/MAILING

Express Mail Label: EV 530884272 US

I hereby certify that this correspondence is being deposited with the United States Postal Service with "Express Mail Post Office to Address" service under 37 CFR 1.10 on this date December 17, 2004 and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Signature



Typed or printed name

Joy Salvador

Date

December 17, 2004

EV530884272US

COPY**FEET TRANSMITTAL**
for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$ 130.00)

PTO/SB/17 (10-04)

Complete if Known

Application Number	10/656,096
Filing Date	September 5, 2003
First Named Inventor	Idei, Hideomi
Examiner Name	Unassigned
Art Unit	2141
Attorney Docket No.	16869S-094000US

METHOD OF PAYMENT (check all that apply)

Check Credit Card Money Order Other None
 Deposit Account:

Deposit Account Number

20-1430

Deposit Account Name

Townsend and Townsend and Crew LLP

The Director is authorized to: (check all that apply)

Charge fee(s) indicated below Credit any overpayments
 Charge any additional fee(s) or any underpayment of fee(s)
 Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION**1. BASIC FILING FEE**

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395	Utility filing fee			
1002 350	2002 175	Design filing fee			
1003 550	2003 275	Plant filing fee			
1004 790	2004 395	Reissue filing fee			
1005 160	2005 80	Provisional filing fee			

SUBTOTAL (1) (\$0.00)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Independent Claims	Multiple Dependent	Extra Claims	Fee from below	Fee Paid

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20		
1201 88	2201 44	Independent claims in excess of 3		
1203 300	2203 150	Multiple dependent claim, if not paid		
1204 88	2204 44	** Reissue independent claims over original patent		
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent		

SUBTOTAL (2) (\$0.00)

** or number previously paid, if greater. For Reissues, see above

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath			
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet			
1053 130	1053 130	Non-English specification			
1812 2,520	1812 2,520	For filing a request for ex parte reexamination			
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action			
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action			
T251 110	2251 55	Extension for reply within first month			
4252 430	2252 215	Extension for reply within second month			
1253 980	2253 490	Extension for reply within third month			
1254 1,530	2254 765	Extension for reply within fourth month			
1255 2,080	2255 1,040	Extension for reply within fifth month			
1401 340	2401 170	Notice of Appeal			
1402 340	2402 170	Filing a brief in support of an appeal			
1403 300	2403 150	Request for oral hearing			
1451 1,510	1451 1,510	Petition to institute a public use proceeding			
1452 110	2452 55	Petition to revive – unavoidable			
1453 1,330	2453 665	Petition to revive – unintentional			
1501 1,370	2501 685	Utility issue fee (or reissue)			
1502 490	2502 245	Design issue fee			
1503 660	2503 330	Plant issue fee			
1460 130	1460 130	Petitions to the Commissioner		130	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)			
1806 180	1806 180	Submission of Information Disclosure Stmt			
8021 40	8021 40	Recording each patent assignment per property (times number of properties)			
1809 790	2809 395	Filing a submission after final rejection (37 CFR § 1.129(a))			
1810 790	2810 395	For each additional invention to be examined (37 CFR § 1.129(b))			
1801 790	2801 395	Request for Continued Examination (RCE)			
1802 900	1802 900	Request for expedited examination of a design application			
Other fee (specify)					

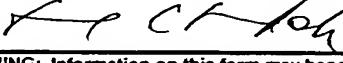
*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$130.00)

SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Chun-Pok Leung	Registration No. (Attorney/Agent)	41,405	Telephone	650-326-2400
Signature			Date	December 17, 2004	

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.



COPY

PATENT
Attorney Docket No.: 16869S-094000US
Client Ref. No.: W1153-01EJ

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

HIDEOMI IDEI *et al.*

Application No.: 10/656,096

Filed: September 5, 2003

For: MANAGEMENT SERVER FOR
ASSIGNING STORAGE AREAS
TO SERVER, STORAGE
APPARATUS SYSTEM AND
PROGRAM

Customer No.: 20350

Examiner: Unassigned

Technology Center/Art Unit: 2141

Confirmation No.: 9922

**PETITION TO MAKE SPECIAL FOR
NEW APPLICATION UNDER M.P.E.P.
§ 708.02, VIII & 37 C.F.R. § 1.102(d)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a petition to make special the above-identified application under MPEP § 708.02, VIII & 37 C.F.R. § 1.102(d). The application has not received any examination by an Examiner.

(a) The Commissioner is authorized to charge the petition fee of \$130 under 37 C.F.R. § 1.17(i) and any other fees associated with this paper to Deposit Account 20-1430.

(b) All the claims are believed to be directed to a single invention. If the Office determines that all the claims presented are not obviously directed to a single invention, then Applicants will make an election without traverse as a prerequisite to the grant of special status.

(c) Pre-examination searches were made of U.S. issued patents, including a classification search and a key word search. The classification search was conducted on or around November 5, 2004 covering Class 709 (subclasses 201, 203, 213, and 214) and Class 711 (subclasses 148 and 170), by a professional search firm, Lacasse & Associates, LLC. The key word search was performed on the USPTO full-text database including published U.S. patent applications. The inventors further provided two references considered most closely related to the subject matter of the present application (see references #8-9 below), which were cited in the Information Disclosure Statements filed on September 5, 2003.

(d) The following references, copies of which are attached herewith, are deemed most closely related to the subject matter encompassed by the claims:

- (1) U.S. Patent No. 6,606,690 B2;
- (2) U.S. Patent Publication No. 2002/0078174 A1;
- (3) U.S. Patent Publication No. 2002/0156984 A1;
- (4) U.S. Patent Publication No. 2003/0110263 A1;
- (5) U.S. Patent Publication No. 2003/0236884 A1;
- (6) U.S. Patent Publication No. 2004/0193827 A1;
- (7) U.S. Patent Publication No. 2004/0194061 A1;
- (8) Japanese Patent Publication No. JP 10-333950; and
- (9) Evaluator Group, Inc., "Virtualization of Disk Storage," The Evaluator Series, WP-0007-1, September 2000, at pp. ii, 1-12.

(e) Set forth below is a detailed discussion of references which points out with particularity how the claimed subject matter is distinguishable over the references.

A. Claimed Embodiments of the Present Invention

The claimed embodiments relate to a system including a management server which manages storage areas of storage apparatuses as virtual storage areas.

Independent claim 1 recites a management server connected to a plurality of servers to manage storage areas included in storage apparatuses as virtual storage areas. The storage apparatuses are shared by the plurality of servers. The storage apparatuses include assignment areas which are storage areas assigned to at least one of the plurality of servers. The management server is responsive to an area assignment instruction of storage areas exceeding unassigned areas received from one of the plurality of servers to release at least part of the assignment areas of other servers as unassigned areas and assign the areas to one of the plurality of servers.

Independent claim 7 recites a storage apparatus system comprising a storage apparatuses; and a management server connected to a plurality of servers and the storage apparatuses. The management server manages storage areas of the storage apparatuses as virtual storage areas. The storage apparatuses are shared by the plurality of servers. The storage apparatuses include assignment areas which are storage areas assigned to at least one of the plurality of servers. The management serve is responsive to an area assignment instruction of storage areas exceeding unassigned areas received from one of the plurality of servers to release at least one of assignment areas of other servers as unassigned area and assign the areas to one of the plurality of servers.

Independent claim 13 recites a computer program product for a management server which manages storage areas included in storage apparatuses as virtual storage areas. The management server is connected to a plurality of servers. The storage apparatuses are shared by the plurality of servers through the management server and include assignment areas which are storage areas assigned to at least one of the plurality of servers. The computer program product comprises code for being responsive to an area assignment instruction of storage areas exceeding unassigned areas received from one of the plurality of servers to release at least part of assignment areas of other servers as unassigned areas and assign the area to one of the plurality of servers; and a computer readable storage medium for storing the code.

One of the benefits that may be derived is that even when the unassigned area is insufficient, the storage area can be assigned to the server issuing the assignment request without waiting until the storage capacity is increased by increase of a new storage apparatus in the SAN or the like. Further, even when the assignment request of the storage areas exceeding the unassigned areas is issued by the server, the storage areas can be assigned to the server to thereby utilize the storage area in the storage pool efficiently.

B. Discussion of the References

None of the following references disclose a management server that is responsive to an area assignment instruction of storage areas exceeding unassigned areas received from one of the plurality of servers to release at least part of the assignment areas of other servers as unassigned areas and assign the areas to one of the plurality of servers.

1. U.S. Patent No. 6,606,690 B2

This reference discloses a system and method for accessing a storage area network as network attached storage. Discussed are SAN servers 302 that communicate with NAS servers 304 using a protocol containing commands that the NAS servers 304 understand. The commands can direct the NAS servers 304 to allocate and deallocate shared storage 110, 112, 114 from the SAN 120 to and from the second network 116. SAN storage manager 404 located in SAN server 302 communicates with NAS server 304 through second network interface 402 to allocate and deallocate storage from NAS server 304. SAN storage manager 404 can send allocation and deallocation directives, and status directives, to NAS server 304. See Figs. 3B and 4; column 5, lines 26-30; column 6, lines 59-62; and column 17, lines 53-57.

2. U.S. Patent Publication No. 2002/0078174 A1

This reference discloses a method and an apparatus for automatically adapting a node in a network. Discussed is a storage management subsystem 2070 that monitors cluster storage usage, supports content rating and pruning, and notifies the content management servers (CMS) 570 of the storage usage of each content provider. Pruning includes freeing the storage used by some blocks or files for use by other blocks or files based on specific usage patterns. The storage management subsystem 2070 includes a

storage management agent that monitors the total local storage availability and the storage availability of a content provider, schedules content pruning, and reports storage usage information and shortage warnings to CMS 570. See Figs. 5 and 20; and paragraphs [0121], [0175], and [0186]. Applicants note that there are 23 known family members for this U.S. Patent application.

3. U.S. Patent Publication No. 2002/0156984 A1

This reference contains the same disclosure as reference #1.

4. U.S. Patent Publication No. 2003/0110263 A1;

This reference discloses a managing storage resources attached to a data network. Discussed is a system for dynamically managing and allocating storage resources 141-143 to application servers 121-123 connected to a data network 100. A managing server 150 identifies all the physical storage resources 141-143 that are connected to network 100 and collects them into a virtual storage pool 160, which is implemented by a plurality of segments that are distributed, using predetermined criteria that are dynamically processed and evaluated, among the physical storage resources, such that the distribution is transparent to each application. Server 150 can re-allocate virtual storage resources to each application according to its actual needs and the level of usage. See Fig. 1; and paragraphs [0041] and [0042].

5. U.S. Patent Publication No. 2003/0236884 A1

This reference discloses a computer system and a method for storage area allocation. Discussed is a device allocation program on a host 11 that sends a request to a storage management server 13. The storage management server 13 compares the storage configurations of the SAN and NAS systems with the presented requirements for the file system area, selects a storage area 12 which best meets the requirements, reconfigures the storage and returns the information about the position of the allocated area to the host 11. See Fig. 1 and paragraph [0100].

6. U.S. Patent Publication No. 2004/0193827 A1

This reference discloses a computer system for managing performances of storage apparatus. In a computer system with a DBMS running thereon, management of the performance of a storage apparatus is executed by using a performance indicator provided by a user job so as to simplify the management of the performance. For this reason, a management server employed in the computer system monitors an operating state of each system element, a response time onto a job and other information. Pre-given information on a process such as a performance requirement the collected monitored information are used by the management server in issuing a command to change allocation of a processing amount to a port, an allocation of a cache area for data, the logical configuration of disc drives and other parameters in order to carry out the new process or in the case where a result of a judgment based on the monitored information indicates that tuning is necessary. In the case of a process for a batch job, a method for estimating a processing time is given to the management server, which issues a setting modification command based on an estimated processing time. In the case of a process for an on-line job, on the other hand, a command to modify settings of a member bearing a heavy load is issued in the case where a response time on a process and/or a throughput do not meet their performance requirement.

7. U.S. Patent Publication No. 2004/0194061 A1;

This reference discloses a method for allocating programs. Disclosed is monitoring that is performed with regard to the performance and capacity of a server executing various business application programs (APs), the performance and capacity of a storage device, or a cluster made up of a plurality of servers. A business service is provided by reallocating the business AP in accordance with these monitoring results. If the load for a particular server has increased, then reallocation can be performed unnecessarily for that business AP. A space scheduler 44 of a private domain management server 11 determines surplus resources. See Fig. 36; and paragraphs [0005], [0006], and [0197].

8. Japanese Patent Publication No. JP 10-333950

This reference discloses a free file space preparation system to secure a free file space and to continue a file preparation processing and a file extension processing by

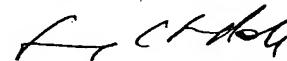
releasing an unused file space in the case of lacking the free file space on an auxiliary storage device at the time of file preparation and file extension. An unused file space release means 105 receives an unused file space release request from a file space securing means 104, finds a file for which the size of logic data 109 is smaller than the size of the file space 108 while retrieving file management information 107 on the auxiliary storage device 106 and releases the unused file space 110 of the difference of the file space 108 and the logic data 109 of the file. When the unused file space 110 is released and the free file space is prepared in the auxiliary storage device 106, control is returned to the file space securing means 104..

9. Evaluator Group, Inc., "Virtualization of Disk Storage," The Evaluator Series, WP-0007-1, September 2000, at pp. ii, 1-12.

This reference discloses the virtualization technique for disk storage. According to the virtualization technique, a management server connected to storage apparatuses and servers using the storage apparatuses manages storage areas of the storage apparatuses connected to the SAN as virtual storage areas (storage pool) collectively and receives requests from the servers to the storage apparatuses. The management server accesses to the storage areas of the storage apparatuses connected thereunder in response to the requests from the servers and returns its results to the servers.

(f) In view of this petition, the Examiner is respectfully requested to issue a first Office Action at an early date.

Respectfully submitted,



Chun-Pok Leung
Reg. No. 41,405

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300

Attachments

RL:rl

60362119 v1